Biology Toolkit: Indicator 3.3.4

Student Handout: Biology: Indicator 3.3.4

Goal 3.0 Concepts Of Biology

Expectation 3.3 The student will analyze how traits are inherited and passed on from one generation to another.

Indicator 3.3.4 The student will interpret how the effects of DNA alteration can be beneficial or harmful to the individual, society, and/or the environment.

Assessment Limits:

mutations

chromosome number (abnormalities)

genetic engineering (gene splicing, recombinant DNA, cloning)

Public Release - Selected Response Item - Released in 2009

Biology Indicator 3.3.4

Use the information and the diagram below to answer the following item.

The diagram below shows stages of cell division of an amoeba, a unicellular organism.

Scientists have found that the rate of division in amoebas is controlled. Scientists believe that the transition from stage 2 to stage 3 is slowed by proteins. The additional time seems to help the amoeba change coding errors caused during DNA replication.

Which of these is most likely to be found in amoebas that do not have a sufficient delay between stage 2 and stage 3?

A. mutations
B. competition
C. pH imbalances

D. selection pressures

Correct Answer
A. mutations

Item

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